REMARKS

This Reply is responsive to the Office Action dated March 9, 2005. Entry of the amendments and remarks submitted herein and reconsideration of the claimed subject matter pursuant to 37 CFR §1.116 is respectfully requested.

I. Status of the Claims

Claims 57-120, 122-125, 129-132, 134-136, 141-144, 149-152, 154 and 156-162 were pending in this application at the time of the Office Action dated March 9, 2005. As a result of this amendment, no claims have been canceled or added. Accordingly, claims 57-120, 122-125, 129-132, 134-136, 141-144, 149-152, 154 and 156-162 remain pending and under examination.

II. Amendments to the Claims

Claims 57, 65, 73, 78, 86, 94, 102, 108, 120, 132 and 144 have been amended without prejudice above to clarify that each polymer is on a known, localized area of less than 2.5×10^5 microns^2, and the density of the diverse polymers is at least 400 diverse polymers per cm^2.[1] Support for these amendments may be found in the specification at the very least at page 2, lines 13-14 and lines 26-34; page 3, lines 36 to page 4, line 15; page 11, lines 29-36 and page 15, lines 13-30. Support for the density recitation may also be found in dependent claims 62, 70, 83, 91, 99, 105, 110, 114, 122 and 150, each of

[1] This recitation should not be construed to exclude instances where the intention is to synthesize at least 400 diverse polymers per cm^2, but polymer synthesis is unintentionally and prematurely terminated.

which has been canceled above. Claim 142 has been amended to correct an inadvertent grammatical error. No prohibited new matter has been added.

III. Rejections under 35 U.S.C. §112

Claims 57-120, 122-125, 129-132, 134-136, 141-144, 149-152, 154 and 156-162 have been rejected under 35 U.S.C. §112, first paragraph, for allegedly containing new matter. Specifically, the Office Action asserts that the claims still lack the limitation of a photon counting program. The Action also questions support for the limitation of "less than ½" in claims 102-107. Applicants respectfully traverse the rejection.

Regarding the limitation "less than ½" in claims 102-107, the Examiner acknowledged in the Office Action dated January 12, 2005, that the recited limitation is disclosed at page 56, lines 10-14, with respect to fluorescence intensity evaluation. Claim 102 has since been amended to refer to collecting "fluorescent" intensity data (see Reply filed May 26, 2004). Therefore, while Applicants disagree with the rejection, it appears that the rejection is no longer applicable in view of the previous amendments to the claims.

With regard to the Examiner's assertion that reference to a photon counting program must be included in the claims, according to the U.S. Patent & Trademark Office Board of Patent Appeals and Interferences, the critical inquiry as to whether an omitted limitation creates new matter is "whether the original disclosure indicates or suggests that the omitted limitation 'was essential or critical to either the operation or patentability of the invention.'" *In re Peters*, 723 F.2d 891, 893, 221 USPQ 952, 953 (Fed. Cir. 1983). In the present case, the Examiner has not established that the limitation

pertaining to a photon counting program is either critical or essential to the operation of the invention, and the Applicants are improperly being confined to a specific embodiment. *Id.* at 953. Applicants respectfully submit that photon counting is but one embodiment disclosed in the specification and the claims as they stand merely omit an unnecessary limitation that has nothing to do with the operation or patentability of the invention.

The overall disclosure reasonably conveys to one skilled in the art that other types of images and image detection means may be used in the methods and systems of the invention. *See In re Peters*, 221 USPQ at 953-54. For instance, US Patent No. 5,143,854 (USSN 07/492,462), which was incorporated by reference for all purposes (see first paragraph of original specification), discloses that receptors that bind to polymers on the substrate may be labeled with a fluorescent marker, radioactive marker or a labeled antibody, and that location of the marker on the substrate may be detected with for example, photon detection or autoradiographic techniques (col. 3, lines 45-49, with emphasis; see also col. 10, lines 44-50). As further stated in the '854 patent (col. 22, line 61 to col. 23, line 8, with emphasis):

> In practice it is found that a receptor will bind to several peptide sequences in an array, but will bind much more strongly to some sequences than others. Strong binding affinity will be evidenced herein by a strong fluorescent or radiographic signal since many receptor molecules will bind in a region of a strongly bound ligand. Conversely, a weak binding affinity will be evidenced by a weak fluorescent or radiographic signal due to the relatively small number of receptor molecules which bind in a particular region of a substrate having a ligand with a weak binding affinity for the receptor. Consequently, it becomes possible to determine relative binding avidity (or affinity in the case of univalent interactions) of a ligand herein by way of the intensity of a fluorescent or radiographic signal in a region containing that ligand.

Thus, it is clear from the present disclosure that both autoradiography and photon detection may be used in the systems of the invention, and therefore, images other than photon data images may be generated. The Examiner has provided no evidence to suggest that the photon detection embodiment is essential or critical to the invention.

In view of the amendments and remarks presented above, reconsideration and withdrawal of the new matter rejection under 35 U.S.C. §112, first paragraph, are respectfully requested.

IV. Rejections under 35 U.S.C. §102

Claims 57-120, 122-125, 129-132, 134-136, 141-144, 149-152, 154 and 156-162 were rejected under 35 U.S.C. §102(b) as being allegedly anticipated by Williams et al. Applicants respectfully note that the claims have been amended above to clarify that each polymer is on a known, localized area of less than 2.5×10^5 microns^2, and that the density of the diverse polymers is at least 400 diverse polymers per cm^2. According to the Office Action, each polymer of Williams et al. would take up an area that is less than 2.5×10^5 microns, however, such areas are not known, localized areas as recited in the amended claims. Further, the polymers of Williams et al. are synthesized using the geometry of a 96 well plate (see abstract). Accordingly, Williams et al. does not disclose a substrate having at least 400 diverse polymers per cm^2 as recited in the amended claims. Reconsideration and withdrawal of the rejection based on Williams et al. are respectfully requested.

This reply is fully responsive to the Office Action dated March 9, 2005. Therefore, a Notice of Allowance is next in order and is respectfully requested.

Except for issue fees payable under 37 CFR §1.18, the commissioner is hereby authorized by this paper to charge any additional fees during the pendency of this application including fees due under 37 CFR §1.16 and 1.17 which may be required, including any required extension of time fees, or credit any overpayment to Deposit Account 50-0310. This paragraph is intended to be a **CONSTRUCTIVE PETITION FOR EXTENSION OF TIME** in accordance with 37 CFR §1.136(a)(3).

If the Examiner has any further questions relating to this Reply or to the application in general, he is respectfully requested to contact the undersigned by telephone so that allowance of the present application may be expedited.

Respectfully submitted,

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